

USSR

UDC 615.372:576.851.555

KALINICHENKO, N. E., STAROBINETS, Z. G., PODGORNAYA, L. G., and BIRYUKOVA, S. V., Kharkov Institute of Microbiology, Vaccines and Sera imeni Mechnikov

"Sensitizing Properties of Purified Concentrated Clostridium perfringens Toxoids"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 113-116

Abstract: Subcutaneous injection of mice and guinea pigs with sorbed (on aluminum hydroxide) or nonsorbed Cl. perfringens toxoids produced the typical severe symptoms of anaphylactic shock. The effect of the sorbed toxoid was more severe. The animals' reaction was the same whether the toxoids were prepared on casein or bouillon culture media. The sensitizing activity of the Cl. perfringens toxoid was caused by the protein of this antigen and not by an admixture of proteins from the nutrient media.

Cardiovascular Diseases

USSE

UDC 616.127-005.8-036.11-057 (99)

KALINICHENKO, N. I., Odessa Medical Institute

"A Case of Acute Myocardial Infarction That Occurred During a Long Cruise in the Antarctic"

Moscow, Kardiologiya, No 12, 1971, p 122

Abstract: Acute impairment of the coronary circulation developed in a number of apparently healthy seamen during a long cruise in the Antarctic. By way of illustration, a repetition of squeezing pain in the heart in a 38-year-old man led to his evacuation to the health station of the whaling base where acute myocardial infarction of the anterolateral wall of the left ventricle with involvement of the interventricular septum was diagnosed on the basis of clinical and EKG data. When the ship reached Odessa, the seaman was hospitalized for 35 days and then discharged in satisfactory condition. A follow-up examination 1 year later revealed inhibition of fibrinolysis and disturbance of lipid metabolism. The EKG showed deviation of the electrical axis to the left, myocardial hypertrophy, and bundle-branch heart-block. The man's condition has remained satisfactory for the last 3 years and he is now working on shore as an engineer.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--COGRANULATION OF RUBBERS -U-

AUTHOR--(04)--KALINICHENKO, V.N., BLIKH, G.A., SAPRONOV, V.A., OGNEVSKIY,  
L.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1),  
113-15

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GRANULE FORMATION, RUBBER PROCESSING PLANT, SYNTHETIC  
RUBBER/(U)SKD RUBBER, (U)BSK RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/0782

STEP NO--UR/0153/70/013/001/0113/0115

CIRC ACCESSION NO--AP0124451

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124451

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COGRANULATION OF SKD RUBBER BSK RUBBER (IN A 1:1 RATIO) LED TO IMPROVED EXTRUDABILITY AND DRYING CONDITIONS OF RUBBER GRANULES. COGRANULATION WAS PRESUMABLY ACCOMPANED BY A CHEM. REACTION WHICH IMPROVED THE PHYSICO MECH. PROPERTIES OF THE RUBBERS. FACILITY: DNEPROPETROVSK. KHIM. TEKHNOL. INST. IM. DZERZHINSKOGO, DNEPROPETROVSK, USSR.

UNCLASSIFIED

USSR

UDC 541.183

ZOLOTAREV, P. P., and KALINICHEV, A. I., Institute of Physical Chemistry,  
Academy of Sciences USSR, Moscow

"Stationary Stage of the Non-equilibrium Adsorption Dynamics for the Case  
of Intradiffusion Kinetics. I. General Equations. First (Diffusion)  
Approximation"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 47, No 3, Mar 73, pp 677-680

Abstract: The equation of the stationary stage of non-equilibrium adsorption  
dynamics of a single substance for the case of a convex isotherm has been  
studied. An assumption has been made that the adsorption kinetics is limited  
by the internal diffusion. Approximated solution for this problem has been  
analyzed for the situation when the kinetic and diffusion factors of the  
diffusion of adsorption front are additive.

1/1

- 1 -

Adsorption Phenomena

USSR

UDC 541.183

ZOLOTAREV, P. P., and KALINICHEV, A. I., Institute of Physical Chemistry,  
Acad. Sc. USSR, Moscow

"Stationary Stage of the Non-equilibrium Adsorption Dynamics for the Case  
of Intradiffusion Kinetics. II. Consideration of the Second Approximation"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 47, No 3, Mar 73, pp 681-684

Abstract: The first paper of this series covered the additive kinetics and  
diffusion factors of the diffusion of the adsorption front. This paper  
refines the original solution -- representing the second approximation for  
the case of an arbitrary convex isotherm. The case of Langmuir isotherms  
has been analyzed in detail.

USSR

UDC 541.183

ZOLOTAREV, P. P., and KALINICHEV, A. I., Institute of Physical Chemistry,  
Acad. Sc. USSR, Moscow

"Calculation of Temperature Changes in Cylindrical Adsorbent Grain in the  
Process of Adsorption. II. The Case of Finite Heat Exchange Coefficient"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, No 5, May 72, pp 1130-1134

Abstract: Formulas have been derived describing temperature changes during  
adsorption kinetics in a model cylindrical adsorbent grain. The lateral sur-  
face of such a grain is considered nonpermeable and thermally insulated, the  
adsorbate concentration being maintained constant at the frontal surfaces.  
It is assumed that temperature variation inside the grain is relatively small  
and the adsorption isotherm is linear. In contrast to the preceeding paper,  
the coefficient of heat exchange between the frontal surfaces of the grain  
and the surrounding medium  $\alpha$  is thought to be finite.

1/1

USSR

UDC: 517.9:539.3

KALININ, A. A.

"Direct Solution of Integral Equations of a Second Boundary Value Problem in the Theory of Elasticity for a Sphere"

Tr. Vitebsk. tekhnol. in-ta lek. prom-sti (Transactions of the Vitebsk Light Industry Technological Institute) 1970, vol. 1, pp 108-110 (from RZh-Matematika, No. 3, March 71, Abstract No. 3B299)

Translation: It is shown that the kernel of a system of integral equations of an axially symmetrical problem with a meridional load has logarithmic singularities. Using approximate integration formulas, the author reduces the system of integral equations to a system of linear algebraic equations. B. Ostroverkh

1/1



USSR

UDC 621.376.234

AKIMOV, YU. K., ANDERT, K., ~~KALININ, A. I.~~, CHURIN, I. N., SHURAVIN, V. N.

"Time Measurements with a Germanium Detector"

Moscow, Pribory i Tekhnika Eksperimenta, No 6, 1971, pp 51-54

Abstract: The basic factors determining the time resolution of semiconductor detectors are 1) the occurrence of time fluctuations as a result of superposition of signals on noise from the detector and amplifier; 2) shifting of the circuit response time on variation of the signal amplitude and 3) dependence of the response time on variations of the collection of free charge carriers in the detector with time. These factors were considered when developing the described low-noise preamplifier with a buildup time of 5 nanoseconds and a high-speed shaper with compensation of the dependence of the time resolution on the amplitude dispersion and variations in the pulse front for time measurements with a germanium detector. When recording  $\gamma$ -quanta from  $^{60}\text{Co}$  by a germanium detector with a volume of  $3\text{ cm}^3$  included for coincidence with a scintillation counter, a time resolution of 2.2 nanoseconds was obtained in the energy range of 0.07-1.33 megaelectron volts. The width of the coincidence curve on the 0.1 level of its height was 12.5 nanoseconds. A time resolution of 0.9 nanoseconds was obtained in a narrow energy range.

1/1

USSR

K  
UDC 621.371

KALININ, A. I.

"Studies of UHF Propagation and the Direction of Further Research"

Moscow, Elektrosvyaz', No 4, 1970, pp 63-67

Abstract: The major results of uhf investigations conducted in the Soviet Union and abroad are estimated in this article. The author begins with far tropospheric uhf propagation, which has been explored since the 50's, when it was experimentally discovered. It generally covers some 70-80 thousand kilometers (sic) in range and has not as yet been fully investigated. He recommends simultaneous and extensive investigation of signal statistical characteristics at different frequencies, with antennas of various directional characteristics, for reliably finding the average signal level and fading characteristic statistics as functions of the wavelength, the distance, and the antenna directivity, and estimating the seasonal and diurnal changes in these functions. He also recommends further investigation into fading  
1/2

- 47 -

, USSR

KALININ, A. I., Elektrosvyaz\*, No 4, 1970, pp 63-67

at mountaintops and over sea water at various wavelengths. Methods for designing and computing television and audio broadcasting networks, especially under metropolitan conditions, should be made more accurate, and distance ranges of 80-150 km, where diffraction fields and fields created by reradiation of tropospheric nonuniformities can be measured, should be given special attention.

Electromagnetic Wave Propagation

USSR

UDC 621.371.24

KALITIN, A. I., SHUR, A. A., Active Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications

"Experimental Investigation of Superlong-Range Tropospheric Propagation of Decimeter Radiowaves"

Moscow, Radiotekhnika, No 4, 1970, pp 54-56

Abstract: Tropospheric Propagation of ultrashort wave distances greater than 500 km is called superlong-range propagation. This article contains the results of an experimental study of propagation of decimeter radiowaves over a route approximately 1,000 km long at a frequency of 800-850 megahertz. These results are of interest both for the development of tropospheric radio relay systems with long spacing and for estimating the interstation interference between various radio systems.

The equipment used for the experiment is described briefly including the operating principle of the AFC [Automatic Frequency Control] used. Analysis of the measurements shows that the distribution curves for the depths of the slow fading both in summer and in winter are satisfactorily approximated by a logarithmic normal law; the standard deviation  $\sigma$  (the difference between levels corresponding to 50 percent and 16 percent of the time) are practically identical in summer and winter and are approximately equal to 2.5 decibels; in the summer

1/2

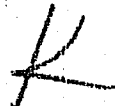
USSR

USSR

KALININ, A. I., SHUR, A. A., Radiotekhnika, No 4, 1970, pp 54-56

the signal levels are approximately 1.5 decibels higher than in the winter; during the worst time of the year the median value of the signal power at the receiver input turned out to be  $P_{2m} \approx -173$  decibel-watts.

The signal levels averaged every 5 minutes are highly stable during the day. On the investigated route, in contrast to routes 600-700 km long, no level "spikes" caused by reflection of waves from aircraft were observed. In the summer the average signal level sometimes exceeded the noise level of the receiver by 15-17 decibels. During these periods, fast fadings were recorded. Processing of the sessions for 5 minutes and for 1 minute showed that the depth of the fast fadings is distributed in the first approximation by the Rayleigh law. The average "period" of the fast fadings determined at the median level varies within the limits from 0.1 to 6 seconds. Periods lasting 0.2-1 second are encountered most frequently.

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--DETERMINATION OF THE CONTENT OF SOME AUXILIARY SUBSTANCES IN  
SUSPENSION POLY VINYL CHLORIDE -U-  
AUTHOR-(05)-PEREPLETCHIKOVA, YE.M., KALININ, A.I., KOMLEVA, V.N.,  
LUNICHEVA, E.V., ZILBERMAN, YE.N.   
COUNTRY OF INFO--USSR  
SOURCE--PLAST. MASSY 1970, (3), 48-51  
DATE PUBLISHED--70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--POLYVINYL CHLORIDE, CHEMICAL SUSPENSION, CHROMATOGRAPHY,  
POLAROGRAPHIC ANALYSIS, COLLOID, LEAD, CADMIUM, BARIUM, CALCIUM, ION,  
CHEMICAL ANALYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1999/1802 STEP NO--UR/0191/70/000/003/0048/0051  
CIRC ACCESSION NO--AP0123599

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123599

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE QUANT. EXTN. OF RESIDUAL INITIATORS (E.G., BZ SUB2 O SUB2, AZOBISISOBUTYRONITRILE, LAUROYL PEROXIDE, ETC.) FROM SUSPENSION POLY (VINYL CHLORIDE) (1) AND THE DETN. OF INITIATORS BY GAS, LIQ. CHROMATOG. AND POLAROGRAPHY WERE DESCRIBED. QUAL. CHEM. REACTIONS WERE USED TO IDENTIFY PROTECTIVE COLLOIDS IN AQ. EXTS. OF I. PB PRIME2 POSITIVE, CD PRIME2 POSITIVE, BA PRIME2 POSITIVE, AND CA PRIME2 POSITIVE WERE DETD. BY EMISSION SPECTROSCOPY, POLAROGRAPHY, AND QUAL. ANAL., WHEREAS THE CONTENT OF CIS,9,OCTADECENE,1,OL WAS DETD. BY GAS LIQ. CHROMATOG.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--INFLUENCE OF THE SURFACE OF THE POLYMERIC PHASE ON THE RATE OF BULK  
POLYMERIZATION OF VINYL CHLORIDE -U-  
AUTHOR-(04)-MARININ, V.G., BORT, D.N., KALININ, A.I., KARGIN, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--VYSOKOMOL. SOEDIN., SER. B. 1970, 12(5), 391-5  
DATE PUBLISHED----- 70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CHEMICAL REACTION RATE, VINYL CHLORIDE, POLYMERIZATION,  
SURFACE PROPERTY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3006/1229 STEP NO--UR/0460/70/012/005/0391/0395  
CIRC ACCESSION NO--AP0134903  
UNCLASSIFIED



2/2 026

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134903

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONC. OF MONOMER SWOLLEN  
POLY(VINYL) CHLORIDE) PARTICLES IS CONST. DURING BULK POLYMN. THE  
POLYMN. RATE (W) INCREASES WITH INCREASING SURFACE AREA (A). A VS. W  
RELATIONS ARE LINEAR ONLY AT HIGH W VALUES.

UNCLASSIFIED

USSR

UDC 621.317.3:621.3.084 (088.8)

YEGOROV, G.P., KALININ, A.N., LUK'YANENKO, A.I., MESTCHIKIN, YA. I., SHUBIN, L.V.

"Device For Investigation Of Electron Streams"

USSR Author's Certificate No 263753, filed 22 Apr 66, published 24 June 70 (from  
RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A127P)

Translation: The device proposed for investigation of an electron stream contains a vacuum chamber with an electron gun, and differs from known devices of this type by the fact that the vacuum chamber is combined with additional vacuum chambers. This assures identical vacuum conditions in the process of measurement of one and the same electron stream by various measuring elements. The electron gun can turn around the axis of the vacuum chambers for successive settings as compared to the respective additional vacuum chambers, and it can also move along the axis of the additional vacuum chambers with the aid of a special device. 2 ill. G.B.

1/1

- 31 -

1/2 038 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--INFLUENCE OF SURFACE DOPING ON THE SURFACE POTENTIAL AND SURFACE  
CONDUCTIVITY OF CADMIUM SELENIDE FILMS -U-  
AUTHOR--(02)-KALININ, A.N., KARPOVICH, I.A.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1490-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS, MATERIALS  
TOPIC TAGS--SEMICONDUCTOR MATERIAL, ELECTRODE POTENTIAL, SURFACE PROPERTY,  
ALUMINUM, METAL COATING, INDIUM, CADMIUM, COPPER, SILVER, POTASSIUM  
CHLORIDE, BROMIDE, IODIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3003/0172 STEP NO--UR/0181/70/012/005/1490/1495  
CIRC ACCESSION NO--AP0129428  
UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129428

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DESCRIBED FOR THE INVESTIGATION OF VARIATIONS OF THE SURFACE POTENTIAL,  $V_{\text{SUBS}}$ , AND SURFACE COND.  $\Sigma_{\text{SUBS}}$ , IN THE PROCESS OF CONTROLLED DEPOSITION ON THE SURFACE OF A SEMICONDUCTOR OF AN IMPURITY AT SURFACE CONCNS.,  $N_{\text{SUBS}}$  IS SIMILAR TO  $10 \text{ PRIME}^{12} \text{ MINUS } 10 \text{ PRIME}^{15} \text{ CM PRIME}^2$ . DATA ARE GIVEN ON THE KINETICS OF THE VARIATION OF  $V_{\text{SUBS}}$  AND  $\Sigma_{\text{SUBS}}$  OF SINGLE CRYSTAL CDSE FILMS IN THE PROCESS OF DOPING WITH SOME METALS (IN, AL, CD, CU, AG) AND IONIC COMPODS. (KCL, KBR, KI, CDI SUB2). IN THE CASE OF METALS, THE EFFECT OF DOPING IS DETD. BY INTERACTION OF METAL ATOMS WITH PHYS. AND CHEM. ADSORBED O AND IS REVERSIBLE. IONIC COMPODS. DO NOT AFFECT  $\Sigma_{\text{SUBS}}$  AND PRODUCE IRRVERSIBLE VARIATIONS OF  $V_{\text{SUBS}}$  RELATED TO THE APPEARANCE OF THE DIPOLE JUMP IN THE POTENTIAL. FACILITY:  
GOR'K. GOS. UNIV. IM. LOBACHEVSKOGO, GORKI, USSR.

UNCLASSIFIED

Acc. Nr: **AP0047255**

Ref. Code:

PRIMARY SOURCE: **K** Urologiya i Nefrologiya, 1970, Nr **UR0606**

pp **40-45**

SOME PROBLEMS OF SURGERY OF THE ADRENAL GLANDS

A. Ya. Abramyan, A. P. Kalinin

Summary

Over 50 operations were accomplished by the authors the last two and a half years on the adrenal glands for tumours of their cortical and medullary layers, in Itsenko-Cushing disease, primary aldosteronism, endarteritis obliterans and generalized carcinoma of the mammary gland. The significance of angiographic examinations, and of determination of central and peripheral venous pressure in surgery of the adrenal glands is discussed. Problems connected with replacement therapy at the immediate postoperative days and at the remote periods after adrenalectomy, with labour and various surgical interventions are given particular attention.

//

REEL/FRAME

**19790762**

DI 2

USSR

UDC 629.114.4:669.14.018.298.2

GULYAEV, A.P., Dr. of Technical Sciences; ZIKKEEV, V.N., Candidate of Techn. Sciences; SKOTNIKOV, V.V., Candidate of Techn. Sciences; KALININ, A.T., Cand. of Techn. Sciences; PROKOF'EVA, I.I., Cand. of Techn. Sciences., and Yelizarov, B.I.

"New Carburizing Steels for Engine Parts of High-Load Capacity Vehicles"

Moscow, Avtomobil'naya Promyshlennost' No 4, Apr 71, pp 37-39

Abstract: Results are presented of an investigation of physical and mechanical properties of the 18KhNMFA and 18KhNMFA steels obtained in electric furnace of 5-ton capacity and rolled into rods 90 and 110-mm in diameter, and intended for manufacturing the transmission box items. The kinetics of austenite transformation at isothermic and continuous cooling, hardenability, brittleness, mechanical properties of steels in carburized and uncarburized state after hardening at 920-950°C in oil and annealing at 180-200°C were studied. The results presented in tabular and graphical form, such as chemical composition, critical points, austenite transformation curves, show two distinct zones of transformation, a ferrite-perlite and a bainite transformations, while the austenite stability in the 18KhNMFA steel is higher than in the 18KhNMFA steel. The microstructures of both steels are similar. The brittleness was evaluated by the cold shortness threshold position, determined by the

1/2

USSR

GULYAEV, A.P., et al, Avtomobil'naya Promyshlennost' No 4, Apr 71, pp 37-39

fracture aspect during serial tests. Both steels satisfy the requirement  $T_{50} < -50^{\circ}$ . The comparative tests of various items made of these and other steels, carried out on test stands, confirmed the higher quality of the K18KhNMF steels over the 15KhGNFA steels.

2/2

- 86 -

USSR

UDC 548.737

KALININ, A. YE., GUSEV, A. I., and STRUCHKOV, YU. T., Institute of Organoelemental Compounds, Academy of Sciences USSR

"The Crystal and Molecular Structure of bis-(Dithioformate)-bis-(triphenylphosphine)ruthenium (II)"

Moscow, Zhurnal Strukturnoy Khimii, Vol 14, No 5, Sep-Oct 73, pp 859-867

Abstract: An x-ray diffraction structural study of the complex  $\text{Ru}(\text{S}_2\text{CH})_2(\text{PPh}_3)_2$  was carried out. This complex crystallizes in the monoclinic system with  $a = 11.651$ ,  $b = 17.388$ ,  $c = 18.376$  Å;  $\beta = 114.47^\circ$ ,  $Z = 4$ , spatial group  $R 2_1/b$ . The coordination of Ru with the four S atoms of the  $\text{S}_2\text{CH}$  ligands and the two P atoms of the  $\text{PPh}_3$  ligands, which are located in a cis-position to each other, is of the distorted octahedral type. The  $\text{S}_2\text{CH}$  ligands form four-membered chelate rings with the Ru atoms. The lengths of the Ru-P bonds (2.344 and 2.336 Å) coincide within the limits of the precision of measurements, while the Ru-S bonds in a trans-position to the P atoms (2.448 and 2.450 Å) are significantly longer than those in a trans-position to each other (2.383 and 2.391 Å). The compound studied was synthesized by T. S. Lobeyevam I. S. Kolomnikov, and M. ye, Vol'pin at the Institute of Organoelemental Compounds by reacting  $\text{H}_2\text{Ru}(\text{PPh}_3)_4$  or  $\text{HRu}(\text{O}_2\text{CH})(\text{PPh}_3)_3$  with  $\text{CS}_2$ .

1/1



USSR

SUYETIN, P. YE., LOYKO, A. E., KALININ, B. A., and GERASIMOV, YU. F.

"Measuring the Interdiffusion Coefficients of Gases at Low Temperatures"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol 19, No 5, Nov 70, pp 933-935

Abstract: The authors measured the interdiffusion coefficients of eight pairs of gases:  $H_2$ -He,  $H_2$ -D<sub>2</sub>,  $H_2$ -Ne,  $H_2$ -Ar, He-Ne, He-Ar, D<sub>2</sub>-Ne, Ne-Ar in the temperature range of 115-296° K. Included in the article is a drawing of the arrangement used in the research, the diffusion chamber of which was cooled with liquid nitrogen. The temperature was maintained within  $\pm 0.3^\circ$  C and the temperature differential along the length of the chamber did not exceed  $0.3^\circ$  C. The samples were checked periodically from the chamber. The authors introduced corrections in their computations for the heat expansion of the diffusion chambers and capillaries, but none for the thermal diffusion ( $< 0.1\%$ ). The measurements were accurate within 1.5% and were determined mainly by the accuracy of measuring the concentration. The diffusion coefficients of the eight pairs of gases were measured in the above range and the data from the pairs He-Ar, He-Ne and Ne-Ar were found to be in good agreement with other data; the temperature dependence of the interdiffusion coefficients of the gases at low temperatures was found for the first time for the pairs

1/2

USSR

SUYETIN, P. YE., et al., Inzhenerno-Fizicheskiy Zhurnal, Vol 19, No 5,  
Nov 70, pp 933-935

H<sub>2</sub>-Ne, D<sub>2</sub>-Ne and H<sub>2</sub>-Ar, The authors include a table depicting the experimental  
diffusion coefficients at a pressure of 760 mm Hg.

2/2

86

USSR

UDC 621.791

GEYNISH, Z. V., KALININ, B. P., DENISOV, A. V., BUCHINSKIY, V. N., Engineers,  
and POTAP'YEVSKIY, A. G., Candidate of Technical Sciences

"The Use of Expendable-Electrode Argon Pulsed-Arc Welding for the Fabrication  
of Chemical Equipment"

Moscow, Khimicheskoye i Neftyanoye Mashinostroyeniye, No 10, Oct 72, p 24

Abstract: VNIIP Tkhimnefteapparatury [All-Union Scientific Research, Planning  
and Technological Institute of Chemical and Petroleum Equipment] has developed  
a technique for the consumable-electrode argon pulsed-arc welding of stainless-  
steel angle, T and lap joints for the fabrication of parts and components for  
column-type apparatuses (trays, spouts, boxes etc.). The use of pulsed-arc  
welding makes it possible to raise labor productivity, improve product quality  
and appearance, and reduce product deformation. Pulsed-arc welding with  
06Kh19N9T and 07Kh25N13 wires assures high mechanical weld-joint properties.  
Such joints are not susceptible to cracking or intercrystalline corrosion.  
The weld seams have the usual austenitic-ferritic structure. The technique  
makes it possible to weld not only austenitic steels, but also semiferritic  
steels, for example OKh13. The developed welding technique has been introduced  
1/2

USSR

GEYNISH, Z. V., et al., Khimicheskoye i Neftyanoye Mashinostroyeniye, No 10, Oct 72, p 24

at the Chernovitskiy Machine-Building Plant for the fabrication of stainless-steel parts and components for column-type apparatuses, resulting in an annual economic effect of about 17,000 rubles.

2/2

USSR

GEL'FAND, I. M., KALININ, D. I., and FUKS, D. B., Moscow State University

"On Cohomologies of a Lie Algebra of Hamiltonian Formal Vector Fields"

Moscow, Funktsional'nyy Analiz i Yego Prilozheniya, Vol 6, No 3, Jul-Sep 72, pp 25-29

Abstract: The article considers the problem of calculating the cohomologies of a Lie algebra of Hamiltonian formal vector fields, which is more difficult to do than to calculate the cohomologies of a Lie algebra of all formal vector fields. Calculations were made on a computer to test the hypothesis that the addition summand is acyclic. The result was that the hypothesis was disproved. The authors found new nontrivial classes of cohomologies of the algebra of Hamiltonian formal vector fields in  $R^2$ . An important difference between these classes and the classes of cohomologies found previously by the authors for the algebra of all formal vector fields is that they cannot be represented by cocycles which depend only on the 2-streams of their arguments.

1/1

USSR

UDC 538.25

BAYBIKOV, B. S., DREYTSER, G. A., KALININ, E. K., and NEVEROV, A. A., Moscow Aviation Institute

"The Effect of Reynolds Number on the Nonstationary Convection Heat Exchange in a Tube During a Change in Heat Load"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 6, Nov-Dec 72, pp 1248-1255

Abstract: Experimental study was carried out of the nonstationary local heat output with a constant air consumption in an electrically heated tube and intermittent change in heat liberation in a thin wall tube. It has been established that the nonstationary heat output differs substantially from the calculated value obtained with an assumption of a quasistationary state. Increase in  $Re$  leads to a diminished effect of the nonstationary state of  $Nu$ . It has been shown that a change in air pressure has no effect on the heat output both during the stationary and nonstationary heat load. Experimental results have been generalized in form of the function  $K = f(K_{Tg}, Re, T_w/T_b)$ . The calculations carried out show that with a nonstationary heat load on the tube wall, the turbulent characteristic of air stream should be substantially different from the quasistationary ones.

1/1

USSR

UDC 536.244:532.517.4.001.5

KALININ, E. K., DREYTSER, G. A., BAYBIKOV, B. S., NEVEROV, A. S.

"Effect of a Nonstationary Heat Flow on Heat Emission in a Pipe Under Gas Heating"

V sb. Teplo- i massoperenos (Heat and Mass Transfer -- Collection of Works), Vol. 1, Minsk, 1972, pp 363-367 (from RZh-Teploenergetika, No 7, Jul 72, Abstract No 7G83)

Translation: An experimental study of the local nonstationary coefficient of heat emission is described. The study was made for different laws of the change in heat emission in two thin-walled tubes of thickness 0.3 and 0.22 mm and internal diameters of 5.93 and 5.56 mm, respectively, and length 1200 mm and for a turbulent gas flow with constant discharge  $G$ . The experiments were in the following ranges:  $Re_b = 10^4 - 6.4 \cdot 10^5$ , temperature factor  $(T_w/T_b) = 1.12-1.16$  and gas pressure 2-2.6 kgauss/cm<sup>2</sup>. The change in  $K = Nu/Nu_0$ , ( $Nu$  and  $Nu_0$  are the nonstationary and quasistationary Nusselt numbers) and in the wall temperature  $T_w$  with time was independent of pressure and is determined

1/2

USSR

KALININ, E. K., et al, Teplo- i massoperenos, Vol. 1, Minsk, 1972, pp 363-367

by  $G$  and the heat release in the walls of the tube. In nonstationary conditions the coefficient of heat release is considerably different from the quasistationary value and depends on the quantity  $K_{Tg} = \partial T_w / \partial T \cdot d / (T_w - T_b)_0 \times \sqrt{\lambda / \psi_p G g}$ , where  $\tau$  is time,  $(T_w - T_b)_0$  is the temperature head in a given section of the tube, the form of the final temperature head for the input and the latter the initial temperature head for the output of the thermal load;  $\lambda$  and  $\psi_p$  are the coefficient of thermal conductivity and the thermal capacity of the gas,  $g = 9.8 \text{ m/c}^2$ . This criterion characterizes the ratio of the nonstationary transfer of thermal flow from the wall to the convective axial thermal flow. The effect of  $K_{Tg}$  on nonstationary heat transfer is reduced with the growth in  $Re$ , the growth of  $T_w/T_b$  for  $T_{Tg} > 0$  and with the decrease of  $T_w/T_b$  for  $K_{Tg} < 0$  and is independent of gas pressure. The experimental results are generalized in the form of relationships between  $K$  and  $K_{Tg}$ ,  $Re$ ,  $T_w/T_b$ . 3 ill., 2 ref. Authors abstract.

2/2



USSR

UDC 632.954:581.176

MIKHNO, A. N., MUSIYAKA, V. K., and KALININ, F. L., Institute of Plant Physiology, Academy of Sciences Ukrainian SSR

"The Character of Histological Disturbances Caused by the Herbicide Tordon 22K in Active Growth Zones of Peas"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 6, 1972, pp 50-53

Abstract: To determine the exact effects of the herbicide, seeds of the pea Ramonskiy 77 were sprouted on filter paper, then planted in Petri dishes when root length reached 2 cm, in a solution of tordon. Concentrations were .000006, .000008 and .0001%, which correspond to the amounts required to suppress root length growth by 25, 50, and 100%. Specimens were secured after 6, 12, and 24 hours, preserved in paraffin and dissected to a thickness of 10 microns, then dyed first with hematoxylin, then with 1% eosin. It was determined that the herbicide had a different effect on various longitudinal cells of root tissues: cells of the skin and the xylem increased in size, while those of the phloem decreased. After herbicide treatment a significant isodiametric stretching was observed in the elongation zone cells. During sharp suppression of root growth this could lead to rupture of the cell wall. The herbicide activated cell division primarily in the tangential and

1/2

USSR

MIKHNO, A. N., et al., Khimiya v Sel'skom Khozyaystve, Vol 10, No 6, 1972,  
pp 50-53

radial planes, which caused an anomalous expansion of the root in width and  
lessened its growth in length.

2/2

- 44 -

USSR

UDC 576.30

KALININ, E. I., Institute of Plant Physiology, Academy of Sciences, Ukrainian SSR, Kiev

"Regulatory Mechanisms of a Cell and Their Control"

Kiev, Fiziologiya i Biokhimiya Kulturnykh Rasteniy, Vol 3, No 3, 1971, pp 264-275

Abstract: Achievements in study of the regulatory mechanisms of the cell are limited primarily to one-celled organisms, and their transfer to higher organisms is therefore subject to simplification. Nevertheless, in the author's opinion the fundamental principles involved are applicable to all living systems. The author discusses in this paper the involvement of phytohormones and other biologically active compounds in the regulatory mechanisms of the cell and the possible ways in which certain metabolic cycles and processes can be affected. The problems of cell activation and inhibition and particularly protein-enzyme synthesis are discussed. Regulation of cell metabolism consists of three principal mechanisms: repression and induction of enzyme synthesis, and change in enzyme activity. The sequence of amino acids in newly synthesized protein is determined by that part of the gene which corresponds to the synthesis of a specific messenger RNA. The functioning of the latter is controlled by a gene-  
1/2

- 24 -

USSR

KALININ, F. L., Fiziologiya i Biokhimiya Kulturnykh Rasteniy, Vol 3, No 3, 1971, pp 264-275

operator in the immediate vicinity of some chromosome part. The author discusses in detail powerful factors, biologically active hormone and nonhormone substances, which control the principal control mechanism of a cell. These factors may include processes which are controlled at various levels (synthesis of DNA, replication and transcription; the synthesis of messenger RNA, translation, transfer RNA; ribosomes which are involved in the formation of the peptide chain, formation of protein-enzyme molecules) and which can regulate enzyme activity at the level of the allosteric effect (feedback) or competing inhibition. Other biologically active materials at the cellular level are coenzymes, metabolites and antimetabolites, as well as inhibitors, which are easily attacked by substrates. The author presents a general scheme showing the interactions and interrelationships between the various species and processes involved.

2/2

1/2 010 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--CELLULAR MEMBRANE FORMATION AND POSSIBILITY OF CONTROLLING IT FOR  
PREVENTION OF WHEAT LODGING -U-  
AUTHOR--(03)--LYASKOVSKIY, M.I., KALININ, F.L., SHALABAI, M.S.  
COUNTRY OF INFO--USSR  
SOURCE--FIZIOL. BIKHIM. KULT. RAST. 1970, 2(2), 181-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--WHEAT, CELL PHYSIOLOGY, PLANT PHYSIOLOGY, CHLORINATED ORGANIC  
COMPOUND, GIBBERELIC ACID  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605001/E07 STEP NO--UR/0654/70/C02/002/0181/0187  
CIRC ACCESSION NO--AP0139375  
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0139375

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHLOROCHOLINE CHLORIDE (CCC) INHIBITED THE BIOSYNTHESIS OF THE BASIC COMPONENTS OF THE CELL WALL OF THE WINTER WHEAT MIRONOWSKAYA 808. THE STEM DEVELOPED BETTER AND THE RESISTANCE TO LODGING INCREASED. GIBBERELIN APPLIED WITH INCREASED N SUPPLY DECREASED THE AMT. OF PLASTIC SUBSTANCES IN THE GROWING TISSUE, INHIBITED THE FORMATION OF THE CELL WALL, AND REDUCED THE DEVELOPMENT OF STEM TISSUE, RESULTING IN DECREASED RESISTANCE TO LODGING.  
FACILITY: INST. PLANT PHYSIOL., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 669.295'292'71

YELYUTIN, O. P., KALININ, G. P., SOBOLEV, N. N., and CHEMLEVA, T. A., Moscow

"Optimum Planning of the Experiment in the Investigation of the Properties of Ti-V-Al Alloys"

Moscow, Izvestiya Akademii Nauk USSR, Metally, No 4, Jul/Aug 72, pp 234-238

Abstract: Mathematical methods of planning were used to establish diagrams of chemical composition and specific electric resistance for titanium-rich alloys of the Ti-V-Al system in the form of an improper simplex with the vertices  $x_1$  (100% Ti),  $x_2$  (60% Ti, 40% V), and  $x_3$  (90% Ti, 10% Al). The use of D- and G-optimum plans made it possible to construct an adequate mathematical model of the investigated diagram by means of which the value of the specific electric resistance at any point of the system can be calculated. In applying mathematical methods to the investigation of composition and properties of multicomponent systems, computer technology can be effectively applied for processing experimental data, plotting and statistically analyzing the model of the investigated dependence, analytical calculations of the studied property, and for diagrammatic representation of modeling results. Three illustrations, one table, five formulas, seven bibliographic references.

1/1

1/2 008 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--HYDROLOGICAL PRINCIPLES OF THE CONTROL OF LAND WATER REGIME -U-  
AUTHOR--KALININ, G.P. K  
COUNTRY OF INFO--USSR  
SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 4, PP 112-120  
DATE PUBLISHED-----70  
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--HYDROLOGY, WATER CONSUMPTION, WATER SUPPLY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FKAME--1987/1021 STEP NO--UR/0050/70/000/004/0112/0120  
CIRC ACCESSION NO--AP0104419  
UNCLASSIFIED



2/2 008

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0104419

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMPORTANT PROBLEMS OF HYDROLOGY  
ARISING IN CONNECTION WITH THE PROSPECT OF SHARP INCREASE IN WATER  
CONSUMPTION FOR IRRIGATION AND WATER SUPPLY ARE STATED. PRINCIPAL  
PROBLEMS OF WATER PROTECTION FROM EXHAUSTION AND POLLUTION ARE EXAMINED.

UNCLASSIFIED

USSR

UDC 681.333:53

KALININ, I. F., SOSUSTIN, B. P., PANTELEYEV, V. I.; Scientific Research  
Institute of Automation and Electromechanics Affiliated With Tomsk Poly-  
technical Institute

"A Device for Modeling Electric Circuits"

USSR Author's Certificate No 321832, filed 7 Apr 70, published 31 Jan 72  
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 7,  
Jul 72, Abstract No 7B477 P)

Translation: This Author's Certificate introduces a device for modeling  
electric circuits which contains a comparison module, a feedback module,  
an input signal generator, a load model, an operational amplifier, a  
square pulse generator, and relays. As a distinguishing feature of the  
device, the class of solvable problems is enlarged by connecting the  
winding of the relay in the comparison unit to the feedback module and  
through the normally closed contact of the commutation relay to the input  
signal generator, whose first output is connected to the square pulse  
generator. The output of the square pulse generator is connected through  
the first normally closed contact of the comparison module relay and

1/2

USSR

KALININ, I. F. et al., USSR Author's Certificate No 321832

through the feedback module to the load model. The second output of the input signal generator is connected through the operational amplifier and the normally open contact of the commutation relay to the winding of the comparison module relay. The winding of the commutation relay is connected through the second normally closed contact of the comparison module relay to the zero line, the load model being connected through the first normally open contact of the comparison module to the zero line as well. One illustration.

2/2

- 68 -

KALININ, I. I.

~185 60572  
19 Nov 73

(4)

EXPERIMENTAL STUDY OF DISTORTION OF A LASER  
LIGHT PULSE DURING PROPAGATION IN THE SEA

[Article by I. I. Kalinin, V. N. Fokichev, A. L. Seregin, and  
D. M. Shchegolev, Leningrad, Onitka Okeana i Atmosfery, Russian,  
Izdatel'stvo Nauka, 1972, pp 168-174]

The development of pulsed lasers has not only intensified interest in the nonstationary problem of scattering but has also put in the hands of investigators a tool for studying multiple light scattering itself. The possibility has appeared, by using a laser with a burst lasting units of tens of nanoseconds and a receiver with high time resolution, of splitting a light signal propagating between two points of a medium into component elements differing in the length of the path of photons within the medium or in the number of acts of scattering experienced.

In [1, 2] the advisability was pointed out of representing the matrix of radiation transfer  $P_{ik}$  from point 1 to point 2 of a scattering medium in the form of the sum of the matrices  $w_{ik}^{(1)}$ , corresponding to the various lengths of the photon path from point to point 2:

$$P_{ik}^{(1)} = \sum_n w_{ik}^{(n)}(0, \omega).$$

Such an approach permits decomposing the transfer matrix by degrees of probability of quantum survival and facilitates successive calculation of scattering of increasing multiplicity.

The development of pulsed technology along the path of reduction of the signal length to the limit beyond which it would be possible to receive it as a  $\delta$ -pulse can lead, if suitable polarizers and analyzers are used, to obtaining the components of the  $w_{ik}^{(1)}$  transfer matrix experimentally.

KALININ, K.K.

SINTERING OF A HEAT-RESISTANT NICKEL-BASE ALLOY

UDC 621.77

[Article by S. S. Kiselev, K. K. Kalinin, and T. I. Frashenko, Department of Heat-Resistant Alloys, Institute of Powder Metallurgy, Moscow Institute of Steel and Alloy Design, Leningrad, 125080, USSR; submitted July 1970, pp 106-109]

UDC 621.77  
154404173

(3)

Heat-resistant nickel, iron- and cobalt-base alloys are often used in cast and deformed states. In work [1] the possibility of producing a heat-resistant nickel-base alloy by means of sintering blanks pressed from powders is reported. The problems of charge preparation and pressing and sintering modes were examined by us in work [2].

The course of the sintering process is determined to a significant degree by the nature of the corresponding phase diagram. In the process of sintering complex systems the formation of alloys is accomplished by diffusion and therefore the rate and completeness of the process of heterodiffusion has much significance [3]. The kinetics of sintered body compaction and change of its physicochemical properties depend on the degree of occurrence of this process. To the factors, influencing the rate of heterodiffusion, belong grain-size increase of sintering powders, uniformity of component distribution, oxide film and increase in the density during pressing. Sintering of complex compositions can be done in both the solid phase and with formation of the liquid phase.

The charge for preparation of the alloy had the following composition (%): 47 Ni, 20 Co, 7.75 Cr, 15 NiAl, 3.75 Cr<sub>2</sub>O<sub>3</sub>, 5 Mo and 1.5 Ti. Proceeding from the fact that chromium sesquioxide and nickel are added to the charge composition, one can surmise that sintering will proceed with the formation of a liquid phase since it is known [4] that during sintering of the

Agriculture

USSR

UDC 632.982

DASHEVSKIY, V. I., Senior Scientific Associate, ~~KALININ, I. B.~~, TRUNOV, I. A.,  
Candidates of Agricultural Sciences, and ZUBOV, P. A., Candidate of Biological  
Sciences, VNIISKHSPGA and All-Union Scientific Research Institute of Forestry  
and Agroforest Melioration

"Experience in Using Rotary Sprayers in the Aerial Spraying of Upland Oak  
Groves"

Moscow, Zashchita Rasteniy, Vol 16, No 11, 1971, pp 34-35

Abstract: Tests were carried out by VNIISKHSPGA on the spraying of upland oak  
groves from aircraft using rotary sprayers with an output of toxic chemicals  
in the range of 3-20 l./ha. The tests were carried out in the spring before  
the opening of leaves on land managed by the Saratov Forestry Administration.  
Four removable rotary sprayers are installed under the wings of AN-2M aircraft.  
The four streams of aerosol, which has a dispersity corresponding to a droplet  
size  $\leq 100$  micron, join to form a single stream during the flight of the plane.  
At air speed of 160 km/hr, a strip 60 m wide is sprayed when the plane flies  
at a height of 10 m above the treetops. This compares with a strip width of  
40 m for sprayers of the present rod type. At the same output of liquid  
(5 l./ha), 383.4 ha/hr could be treated with the new equipment vs. 278.5 ha/hr  
1/2.

USSR

DASHEVSKIY, V. I., et al., Zashchita Rasteniy, Vol 16, No 11, 1971, pp 34-35

for equipment of the older type. An oil solution of DDT (16%) + gamma-hexachlorocyclohexane (4%), undiluted 40% emulsion concentrates of phosphamide (rogor, Bi-58) and carbophos, and a 30% emulsion concentrate of phosphothion (malathion) were sprayed. As a result of spraying with the new equipment, 99% of gypsy moths, brown-tailed moths, leaf rollers and other insect pests were exterminated. DDT + hexachlorocyclohexane were more effective against insects that live in the open than those that live under cover. In 1971 the Ministry of the Aviation Industry will release the first shipment of serially-produced rotary sprayers for AN-2M planes.

2/2

- 1 -

1/2 013 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--STUDY OF THE COMPOSITION OF SOLID TAR IN REACTIVE FUELS -U-  
AUTHOR--ZRELOV, V.N., KALININ, L.L., BOYKO, L.V.  
COUNTRY OF INFO--USSR  
SOURCE--KHIMIYA I TEKHOLOGIYA TOPLIV I MASEL, VOL. 15, NO 2, 1970, P.  
53-56  
DATE PUBLISHED-----70  
SUBJECT AREAS--PROPULSION AND FUELS  
TOPIC TAGS--CHEMICAL COMPOSITION, HYDROCARBON FUEL, ETHER, FUEL STORAGE  
CONTROL MARKING--NO PESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1990/2034 STEP NO--UR/0065/70/015/002/0053/0056  
CIRC ACCESSION NO--AP0109966  
ZZZZZZZZZZ UNCLASSIFIED



2/2 013

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0109966

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE SOLID, INSOLUBLE TARS WHICH ARE THE END PRODUCT OF THE OXIDATION OF LOW STABLE HYDROCARBON FUELS. CHEMICAL COMPOSITION OF DEPOSITS FORMED ON THE BOTTOM OF THE STORAGE TANKS WAS DETERMINED. IT IS SHOWN THAT UNDER PROLONGED STORAGE CONDITIONS, THESE FUELS FORM AROMATIC, UNSATURATED POLYOXYETHERS.

ZZZZZZZZZZ

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--DIAGRAM OF THE CURRENT DENSITY DISTRIBUTION DURING MACHINING STRIPS  
BY ELECTROEROSION -U-  
AUTHOR-(02)-KALININ, M.A., KAMSYUK, M.S.  
COUNTRY OF INFO--USSR *K*  
SOURCE--MASHINOSTROENIE, NO. 2, 1970, PP 136-139  
DATE PUBLISHED-----70  
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--ELECTROEROSION MACHINING, CURRENT DENSITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1985/0315 STEP NO--UR/0418/70/000/002/0136/0139  
CIRC ACCESSION NO--AP0100802  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100802

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OUTLINE OF THE NOTION OF THE CURRENT DENSITY DISTRIBUTION PATTERN DURING ELECTROEROSIVE MACHINING AND PRINCIPLES FOR CONSTRUCTING DIAGRAMS OF THIS DISTRIBUTION. THESE DIAGRAMS ARE CONSTRUCTED ON THE BASIS OF AN EXPRESSION DERIVED BY KALININ AND KAMSIUK (1970). AS EXAMPLES, DIAGRAMS OF THE CURRENT DENSITY DISTRIBUTION FOR A SECTION AND FOR A WHOLE PROFILE OF THE TOOL ARE PRESENTED.

UNCLASSIFIED

USSR

UDC: 539.293:548.4

OVCHAROV, A. T., KALININ, M. I., and LISITSYN, V. M.

"Kinetics of the Radiation Change in Crystal Density"

Tomsk, Izvestiya VUZ--Fizika, No 6, 1972, pp 139-141

Abstract: This brief communication gives the results of an investigation into the radiation change in the density of  $\text{CaF}_2$  crystals and the kinetics of the growth of their absorption band after irradiation by protons. The purpose of the investigation is to study the kinetics of characteristic defect accumulation and find the absorption bands resulting from these defects in the crystal lattice. The  $\text{CaF}_2$  crystals used in the experiments described in this communication were grown at the Leningrad Optical Glass Plant and subjected to proton irradiation at an energy of 4.5 Mev and at room temperature. An earlier paper written by the authors named above (Ye. K. Zavodskaya et al, Izvestiya VUZ USSR--Fizika, No 9, 1969, p 155) describes the method of measuring the crystal density, known as the flotation method; the absorption spectra were measured by an SF-4A spectrophotometer in the 215-1200 nm range. The authors are associated with the S. M. Kirov Polytechnical Institute at Tomsk.

1/1

- 43 -

PROCESSING DATE--04DEC70

UNCLASSIFIED

1/2 039

TITLE--CRACKING OF FLUOROPLASTIC TUBING -U-

AUTHOR--(05)-SYTY, YU.V., GUDIMOV, M.M., SUSHKO, A.I., TYNNVY, A.N.,  
KALININ, N.G.

COUNTRY OF INFO--USSR

SOURCE--FIZ.-KHIM. MEKH. MATER 1970, 6(2), 87-90

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FLUOROCARBON RESIN, HYDRAULIC FLUID, POLYMER HEAT EFFECT, LOW  
TEMPERATURE EFFECT, RUBBER, ANISOTROPY, STRESS ANALYSIS, CRACK  
PROPAGATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/E09 STEP NO--UR/0369/70/003/002/0087/0090

CIRC ACCESSION NO--AP0140317

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 039

CIRC ACCESSION NO--AP0140317

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE EFFECT OF THE TEMP. IN THE  
MINUS 60 TO PLUS 230DEGREES RANGE, TIME, AND CONTACT WITH AVIATION  
HYDRAULIC FLUID WAS STUDIED ON THE DEVELOPMENT OF CRACKS ON THE SURFACE  
OF TUBING MADE OF FLUORINATED RUBBER. MOST CRACKS ARE ALIGNED ALONG THE  
TUBE AXIS INDICATING THAT RADIAL RATHER THAN LONGITUDINAL STRESSES  
PRODUCE THEM. THE PLASTICIZING OF THE RUBBER WITH THE HYDRAULIC FLUID  
AND THE ANISOTROPY OF THE RUBBER STOCK INDUCED BY EXTRUSION ARE  
CONTRIBUTING FACTORS.

FACILITY: FIZ.-MEKH. INST., LVOV, USSR.

UNCLASSIFIED

1/2 047 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--SETUP FOR FATIGUE STRENGTH TESTING OF POLYMER MATERIALS IN VACUUM  
AT LOW AND HIGH TEMPERATURES -U-  
AUTHOR-(04)-SOSHKO, A.I., SPAS, YA.M., KALININ, N.G., TYNNY, A.N.  
COUNTRY OF INFO--USSR  
SOURCE--FIZIKOKHIMICHESKAIA MEKHANIKA MATERIALOV, VOL. 6, NO. 1, 1970, P.  
84-86  
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY, PHYSICS

TOPIC TAGS--FATIGUE STRENGTH, PLASTIC DEFORMATION, LOW TEMPERATURE EFFECT,  
HIGH TEMPERATURE EFFECT, VACUUM, CRYOGENIC EFFECT, POLYMER, FATIGUE  
TEST, CYCLIC LOAD TEST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1995/1246

STEP NO--UR/0369/70/006/001/0084/0086

CIRC ACCESSION NO--AP0116708

UNCLASSIFIED

2/2 047

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116708

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT OF A SETUP FOR STUDYING THE FATIGUE STRENGTH AND DEFORMABILITY OF POLYMER MATERIALS IN VACUUM, AIR, AND GAS ATMOSPHERES AT LOW AND HIGH TEMPERATURES. A STRUCTURAL DIAGRAM AND DETAILED DESCRIPTION OF THIS SETUP ARE PRESENTED. SAMPLES CAN BE SUBJECTED TO CYCLIC LOADING AT FREQUENCIES RANGING FROM 500 TO 1400 CPM AND TEMPERATURES RANGING FROM MINUS160 TO PLUS300 C.

FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, FIZIKO-MEKHANICHESKII INSTITUT, LVOV, UKRAINIAN SSR.

UNCLASSIFIED



1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--EFFECT OF THE RATE OF DEFORMATION ON THE STRENGTH OF POLYMER  
MATERIALS IN LIQUID MEDIA -U-  
AUTHOR--(04)-TYNNVY, A.N., KOLEVATOV, YU.A., SOSHKO, A.I., KALININ, N.G.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ.-KHIM. MEKH. MATER. 1970, 5(6), 677-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--DEFORMATION RATE, POLYMETHYLMETHACRYLATE,  
POLYTETRAFLUOROETHYLENE, MECHANICAL STRENGTH  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1997/0836 STEP NO--UR/0369/70/005/006/0677/0679  
CIRC ACCESSION NO--AP0119740  
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119740

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RELATION BETWEEN DEFORMATION RATE OF POLY(ME METHACRYLATE) AND THAT OF FTOROPLAST-4 (POLY(TETRAFLUOROETHYLENE) AND THE EFFECTS OF ENVIRONMENT (AIR, OLEIC ACID, PETROLATUM, H SUB2 O, GASOLINE, ETOH, AND ACETONE) WERE INVESTIGATED. THE ADVERSE EFFECT OF LIQS. ON THE STRENGTH OF POLYMERS DECREASED WITH INCREASING DEFORMATION RATE. THIS RELATION IS EXPLAINED IN TERMS OF TIME COMPETITION BETWEEN MECH. DEFORMATION AND PHYSICOCHEM. PROCESSES LIKE ADSORPTION OR WETTING. FACILITY: FIZ,-MEKH. INST., LVQV, USSR.

UNCLASSIFIED

USSR

UDC: 8.74

KALININ, O. M.

"Concerning United Mathematical Treatments in Biological Taxonomy and the Dynamics of Populations, and Concerning the Relation Between Diffusion and Nonlinear Equations"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works), vyp. 25, Moscow, "Nauka", 1972, pp 107-117 (from RZh-Kibernetika, No 6, Jun 72, abstract No 6V598)

Translation: The paper pursues two purposes: 1) criticism, 2) a positive program. The criticism relates to the problem of actual meaning. The positive program reduces to united mathematical treatments of multidimensional and continuum-dimensional statistics. The article does not deal with specific applications. Bibliography of 32 titles. Author's abstract.

1/1

USSR

UDC: 8.74

BADENKO, L. A., IVANOVA, L. V., KALININ, O. M., KACHURIN, A. L., KOLO-DYAZHNYI, S. F.

"Analysis of the Motion of Aggregates of Cells in a Fresh-Water Sponge"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works), vyp. 25, Moscow, "Nauka", 1972, pp 119-127 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V599)

Translation: An attempt is made to find estimates of the principal parameters of cell motions on the basis of mathematical processing of individual trajectories of finite aggregates in a fresh-water sponge. Authors' abstract.

1/1

- 72 -

Psychiatry

USSR

UDC 616.891-072.8+616.891-07:616.154.452/.453

KARVASARSKIY, B. D., IOVLEV, B. V., KALININ, O. M., STABROVSKIY, Ye. M.,  
SUSLOV, V. I., and TARABRINA, N. V., Department of Neuroses and Psycho-  
therapy, Leningrad Scientific Research Psychoneurological Institute imeni  
V. M. Bekhterev

"Connection Between Experimental Psychological Characteristics of the  
Personality and Biochemical Indexes in Relation to Problems of the Study  
of Psychic Stress in Neurotics"

Moscow, Zhurnal Nevropatologii i Psikhatrii, 1971, Vol 71, No 8, pp 1199-  
1203

Abstract: Correlations between psychological data obtained from various tests  
(MMPI, frustration method of Rozenzweig, Eysenck questionnaire, and others)  
and biochemical data (blood tests for 11-hydroxycorticosteroids, serotonin,  
protein-bound iodine; urine tests for dopamine, noradrenalin, adrenalin,  
vanillylmandelic acid and others) were established. These relationships were  
determined for 48 neurotics before applied stress, and for a control group of  
healthy persons. The relationships were arrived at by the method of regres-  
sion analysis using a computer.

1/2

USSR

KARVASARSKIY, B. D., et al., Zhurnal Nevropatologii i Psikhatrii, 1971, Vol 71, No 8, pp 1199-1203

It is clear from the results that regression analysis is valuable in forecasting the effects of stress on neurotics, which in turn makes it potentially valuable in studying the pathogenesis and therapy of neuroses.

2/2

- 75 -

Acc. Nr:

AP0052090

Ref. Code:

UR0046

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhatrii imeni  
S. S. Korsakova, 1970, Vol 70, Nr 3,  
pp 399-408

FACTOR ANALYSIS IN STUDIES WITH THE USE OF RATING  
PSYCHOPATHOLOGICAL SCALES

B. V. Iovlev, M. M. Kabanov, O. M. Kalinin, B. D. Kurvasarskiy  
K. V. Korabelnikov

The presentation deals with the possibilities of using rating psychopathological scales in the evaluation of problems of rehabilitation of mental patients. The authors report and analyze the data of factor analysis in schizophrenia, depressive states, obtained with the aid of computers. The results demonstrate that it is possible to use factor analysis for the study of interconnections of psychopathological symptoms as well as of correlations between psychopathological and biological indices.

1/1

REEL/FRAME  
19820628

bdh

2

USSR

BAKEL'MAN, I. Ya.; KALININ, R. P.

"Construction of a Hypersurface with a Given Average Curvature in a Lobachevski Space"

Moscow, Sibirskiy Matematicheskiy Zhurnal; May-June 1970, pp 483-491

Abstract: A semigeodesic system of coordinates  $x_1, x_2, \dots, x_n; z$ , in which the surface  $z = 0$  is the orisphere  $Q_0$ , is given in an  $(n+1)$ -dimensional Lobachevski space.  $Q_0$  is a Euclidean  $n$ -dimensional plane with respect to its internal geometry, and  $x_1, x_2, \dots, x_n$  are a system of cartesian coordinates in  $Q_0$ . It is given that  $\Omega$  is a bounded, convex region on  $Q_0$ . The principal concern of the article is the problem of being able to construct a hypersurface  $S$  with a given boundary orthogonally and unambiguously projected by geodesics perpendicular to  $Q_0$  onto  $\Omega$  such that at the points of the projection of  $S$  ( $x_1, \dots, x_n \in \Omega$ ) the average curvature of  $S$  coincides with the function  $H(x_1, \dots, x_n)$ , determined beforehand in  $\Omega$ . The convex region of the class  $C^{m,a}$ , the normal curvatures of whose boundary at any point  $\partial \Omega$  are not less

1/3



USSR

BAKEL'MAN, I. Ya., et al., Sibirskiy Matematicheskiy Zhurnal; May-June 1970, pp 483-491

than the constant  $k_0 > 0$  is given on the orisphere  $Q_0$ . It is given further that  $H(x_1, \dots, x_n) \in C^{m-2,a}$  and  $H(x_1, \dots, x_n) \leq 0$  and the function  $h(x) \in C^{m,a}$  is located at  $\partial\Omega$ .  $k$  is set equal to  $\sqrt{-1/K}$ , where  $K$  is the curvature of the Lobachevski space. Then if the inequality  $\frac{\psi_H}{h_1^n} < \frac{\psi_0^n}{v_n} A(N_H)$  is

satisfied -- where  $\psi_H = \sup_{\Omega} (1 - kH(x_1, \dots, x_n))$ ,  $h_1 = \inf_{\partial\Omega} k \frac{h(x_1, \dots, x_n)}{k}$ ,  $v_n$  is the volume of a unit  $n$ -dimensional Euclidean sphere, and

$$A(N_H) = \int_{-\infty}^{+\infty} \dots \int_{-\infty}^{+\infty} \left[ 1 + \left( \sqrt{\sum_{k=1}^n u_k^2} + \sqrt{M_H} \right)^2 \right] du_1 \dots du_n, \quad (M_H \text{ is the lower twisting of the}$$

previously given boundary of the required surface) -- then the problem formulated above has a unique solution in  $C^2(\Omega)$  which is expressed by a function of the class  $C^{m,a'}(\Omega + \partial\Omega)$  ( $m \geq 3$ ,  $0 < a' \leq a \leq 1$ ).

2/3

USSR

BAFEL'MAN, I. Ya., et al., Sibirskiy Matematicheskiy Zhurnal; May-June 1970, pp 483-491

The authors note, in passing, an independent interest in the evaluation of the elevation and inclination of the tangent planes to the orisphere with respect to the properties of the average curvature and boundary of the required hypersurface.

3/3

- 37 -

1/2 014 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--GEOCHEMISTRY OF PLATINUM GROUP ELEMENTS IN ORES OF COPPER  
MOLYBDENUM DEPOSITS IN THE ARMENIAN SSR -U-  
AUTHOR--(03)-FARAMAZYAN, A.S., KALININ, S.K., TEREKHOVICH, S.L. K  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1455-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--GEOCHEMISTRY, PLATINUM, COPPER, MOLYBDENUM, METAL ORE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1990/0278 STEP NO--UR/0020/70/190/006/1455/1457  
CIRC ACCESSION NO--AT0108578  
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AT0108578

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SAMPLES OF ORES AND CU AND MO CONCS. FROM THE KADZHARAN, AGARAK, DASTAKERT, AIGEDZOR, AND DZHINDARA DEPOSITS WERE ANALYZED FOR PT METALS, CU, MO, AU, AND AG. THE PT METAL CONTENTS IN ORES VARIED WITHIN WIDE RANGES AND WERE DISTRIBUTED VERY UNIFORMLY. ANAL. OF 6 SAMPLES OF MO CONC. SHOWED 0.026-1.1 PPM. PT. THERE WAS NO CORRELATION BETWEEN THE AU AND AG CONTENTS AND THOSE OF PT METALS AT A VERY WEAK CORRELATION BETWEEN CONTENTS OF PT METALS AND COM. COMPONENTS OF THE ORE (MO AND CU). THERE WERE DISTINCT DIFFERENCES BETWEEN DISTRIBUTION OF PT METALS IN CU AND MO CONCS. THE MO CONCS. HAD HIGHER CONTENTS OF PT AND PD THAN CU CONCS., I.E. MOLYBOENITE IS THE MAIN MINERAL CONCENTRATOR OF PT METALS WHEREAS CHALCOPYRITE IS THEIR MAIN MINERAL CONCENTRATOR OF PT METALS WHEREAS CHALCOPYRITE IS THEIR MAIN MINERAL BEARER. QUITE DISTINCT CORRELATION DEPENDENCE BETWEEN CONTENTS OF PD AND PT WAS OBSD. IN MO CONCS. WHERE PT PREDDMINATED OVER PD (PD-PT EQUALS 0.3-1 1-1). IN CU CONCS. AND ORES, THE PD CONTENT WAS USUALLY 5-6 TIMES HIGHER THAN THAT OF PT. NO INDEPENDENT PT MINERALS WERE DETECTED. HOWEVER, THE MINERAL FORM OF THEIR PRESENCE (SULFIDES OR OTHER COMPS.) IS SUSPECTED IN THE FORM OF SUBMICROSCOPIC INCLUSIONS. THE DISTRIBUTION OF PT AND PD IN CU AND MO CONCS. EVIDENTLY WAS CONTROLLED BY THE TEMP. OF MINERALIZATION. THE PT MINERALS WITH ADMIXT. OF PD ASSOC. WITH THE EARLIEST AND HIGH TEMP. MO MINERALIZATION WHEREAS MINERALS OF PD WITH ADMIXT. OF PT WERE RELATED TO THE LATER RELATIVE LOW TEMP. (CHALCOPYRITE) STAGE OF MINERALIZATION.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--HIGHLY SENSITIVE SPECTROPHOTOMETRIC METHOD FOR DETERMINING RHODIUM  
-U-  
AUTHOR--(02)--KALININ, S.K., YAKOVLEVA, G.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 312-14  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--SPECTROPHOTOMETRIC ANALYSIS, TIN CHLORIDE, RHODIUM, TRACE  
ANALYSIS, METAL COMPLEX COMPOUND  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1994/1880 STEP NO--UR/0075/70/025/002/0312/0314  
CIRC ACCESSION NO--AP0115699  
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115699

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OPTIMUM CONDITIONS FOR COMPLEX FORMATION IN THE SYSTEM RH(III)-HCL-H SUB2 O-HCLD SUB4+SNCL SUB2 ARE 0.05M HCL IN 6M HCLD SUB4, AND SN-RH RATIO LARGER THAN OR EQUAL TO 5000:1. THE COMPLEX HAS MAX. ABSORBANCE AT 330 NM AND DECOMPS. IN THE PRESENCE OF 2-6M HCL. BEER'S LAW IS OBEYED IN THE RANGE 0.01-0.5 MUG RH-ML IN THE PRESENCE OF 0.064M SNCL SUB2. THE MOLAR ABSORPTIVITY OF THE COMPLEX IS 5.4 TIMES 10 PRIME4. THE SENSITIVITY OF THE METHOD IS 10 TIMES HIGHER THAN OF THE METHOD WITH SNCL SUB2. THE DETERMINABLE MIN. IS 13 TIMES 10 PRIME NEGATIVE8 G RH. THE ERROR IN THE DETN. OF 0.05-0.15 MUG RH-ML IS PLUS OR MINUS 10PERCENT, IT INCREASES 2-3-FOLD AT SMALLER RH CONCNS.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--DETERMINATION OF ALUMINUM -U-

AUTHOR--(03)-VOROPAYEVA, G.A., KALININ, S.K., TARKHINA, V.D.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,539

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOTOMETRIC ANALYSIS, CHEMICAL PATENT, ORGANIC SOLVENT,  
ALUMINUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3004/0833

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0131426

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0131426

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AL IS DETD. BY FORMING AL  
COMPLEXES WITH TRIPHENYLMETHANE DYES (E.G. CHROME AZUROL S OR ERIOCHROME  
CYANINE) AND PHOTOMETRIC ANAL. OF THE COMPLEX. THE COMPLEX IS SEPD. BY  
FLOTATION BY ADDN. OF ORG. SOLVENTS TO THE STARTING SOLN.  
FACILITY: GIPRONIKEL STATE PLANNING AND SCIENTIFIC RESEARCH INSTITUTE  
OF THE NICKEL INDUSTRY.

UNCLASSIFIED



1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--EXTRACTION OF RHODIUM STANNOUS CHLORIDE COMPLEXES BY TRI N BUTYL  
PHOSPHATE -U-  
AUTHOR--(04)-KALININ, S.K., KATYKHIN, G.S., NIKITIN, M.K., YAKOVLEVA, G.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 535-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--RHODIUM COMPOUND, TIN CHLORIDE, COMPLEX COMPOUND, ORGANIC  
PHOSPHATE, CHEMICAL SEPARATION, SOLVENT EXTRACTION, SPECTROGRAPHIC  
ANALYSIS, PHOTOMETRIC ANALYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3005/0013 STEP NO--UR/0075/70/025/003/0535/0538  
CIRC ACCESSION NO--AP0132313

UNCLASSIFIED

2/2

021

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132313

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTIMUM CONDITIONS WERE FOUND FOR THE EXTN. SEPN. OF TRACE AMTS. OF RH AS ITS COMPLEX WITH SNCL SUB2 FROM HCL MEDIA WITH BU SUB3 PG SUB4. RH CAN BE QUANT. EXTENDED FROM 6.0M HCL OR FROM 2-6M HCL SUB4 MEDIA BY USING GREATER THAN OR EQUAL TO 0.054M SNCL SUB2. EQUIL. IS ESTABLISHED AT VARIOUS INTERVALS FOR 0.5, 2.0, OR 6.0M HCL; IN THE LATTER CASE IT TAKES 30 SEC. RH CAN BE REEXTD. FROM THE ORG. PHASE WITH 0.25-0.5M HCL AFTER DILN. WITH C SUB6 H SUB6. RH CAN BE DETD. SPECTROGRAPHICALLY IN THE AQ. PHASE BY USING THE RH 3434 ANGSTROM LINE OR BY A PHOTOMETRIC METHOD WITH SNCL SUB2. FACILITY: STATE SCI. RES. DES. INST. GIPRONIKEL, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 547.772\*539.4

KARELE, B. YA., KALNIN', S. V., GRINBERG, I. P., and NEYLAND, O. YA., Riga Polytechnical Institute

"Iodonium Derivatives of Heterocyclic Compounds. I. Phenyliodonium Salts and Betaines of Pyrazoles"

Riga, Khimiya Geterotsiklicheskikh Soedineniy, No 2, Feb 73, pp 245-248

Abstract: A method was developed for the synthesis of phenyliodonium derivatives of pyrazoles. Reaction of pyrazole, 3,5-diphenylpyrazoles and 3,5-dienthylpyrazoles with phenyliodosoacetate in presence of p-toluene-sulfonic acid yields the tosylates of 4-phenyliodoniopyrazoles which upon treatment with alkali convert to 4-phenyliodoniopyrazole betaines. By means of exchange reactions the tosylates were converted to respective chlorides, bromides and iodides. Betaines reacted with hydrogen fluoride and hydrogen borofluoride to yield 4-phenyliodoniopyrazole fluorides and borofluorides. On the basis of electron absorption spectra the ionization constants of a series of phenyliodonium derivatives of pyrazoles have been calculated. 4-Phenyliodonium group increases the acidity of pyrazoles by 4.5-5 orders of magnitude.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--PROTEIN METABOLISM IN WHEAT DURING THE USE OF 2,4,D -U-  
AUTHOR--(04)-KRISHCHENKO, V.P., KALININ, V.A., MAKHAJAD, M., CHERNYAYEV,  
N.G.  
COUNTRY OF INFO--USSR  
SOURCE--AGROKHIMIYA 1970, (5), 102-8  
DATE PUBLISHED-----70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WHEAT, PROTEIN METABOLISM, PLANT GROWTH REGULATOR, CHLORINATED  
ORGANIC COMPOUND, BENZENE DERIVATIVE, HERBICIDE, CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FILE/FAME--3006/0454

STEP NO--UR/0485/70/000/005/0102/0108

CIRC ACCESSION NO--AP0134222

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134222

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 2,4,D DECREASED THE TOTAL CONTENT OF EASILY AND DIFFICULTY SOL. PROTEINS AND INCREASED THE PROPORTION OF MODERATELY SOL. PROTEINS IN WHEAT VEGETATIVE MASS. IN PROPORTION TO THE GROWTH OF TREATED WHEAT, THE HERBICIDE WAS OBSO. IN ALL THE PROTEIN FRACTIONS AND INCREASED IN THE DIFFICULTY SOL. PROTEINS AS THE TOTAL AMT. OF 2,4,D DECREASED. TEAE, CELLULOSE CHROMATOG. OF THE H SUB2 O SOL. PROTEIN FRACTION IN THE VEGETATIVE MASS OF PROTEIN FROM WHEAT INCORPORATING 2,4,D SHOWED THAT THE HERBICIDES WAS INCORPORATED INTO ONLY 1 SUBFRACTION.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE—30OCT70  
TITLE—RADIO FREQUENCY CONTROL SYSTEM FOR THE BEAM OF THE 70 GEV PROTON  
SYNCHROTRON —U—  
AUTHOR—(04)—IVANOV, YU.S., KALININ, V.A., KUZMIN, A.A., CHIRKOV, S.V.  
COUNTRY OF INFO—USSR  
SOURCE—(CERN TRANS 69-24) NTD 6823. 11P. DEP. CFSTI  
DATE PUBLISHED—70  
SUBJECT AREAS—PHYSICS  
TOPIC TAGS—SYNCHROTRON, PROTON, FREQUENCY CONTROL  
CONTROL MARKING—NO RESTRICTIONS  
DOCUMENT CLASS—UNCLASSIFIED  
PROXY REEL/FRA--3001/1912 STEP NO--UR/0000/70/000/000/0001/0011  
CIRC ACCESSION NO--AT0127313  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0127313

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYSTEM FOR THE CONTROL OF THE RADIOFREQUENCY BY USE OF THE BEAM IS BASED ON THE REGULATION OF THE FREQUENCY OF THE PILOT GENERATOR BY SIGNALS PROPORTIONAL TO THE RADIAL DISPLACEMENT OF THE BEAM WITH RESPECT TO THE NOMINAL ORBIT AND PROPORTIONAL TO THE DEPHASING OF THE CENTER OF GRAVITY OF THE BEAM WITH RESPECT TO THE ACCELERATOR FIELD. THE CONTROL SYSTEM IS DESCRIBED AND ITS OPERATIONAL EFFICIENCY IS DISCUSSED. FACILITY: AKADEMIYA NAUK SSSR, MOSCOW. RADIOTEKHNICHESKII INSTITUT.

UNCLASSIFIED

Corrosion

USSR

UDC: 669.715:620.193

BUDOV, G. M., KALININ, V. D.

"Corrosion Behavior of Aluminum Alloys for Construction Structures"

Tekhnol. Legkikh Splavov. Nauch.-Tekhn. Byul. VILSa [Technology of Light Alloys. Scientific and Technical Bulletin of All-Union Institute for Light Alloys], 1973, No 3, pp 60-64 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8I685, by the authors).

Translation: The corrosion behavior of Al alloys is studied under various atmospheric conditions over a period of 5 years. The alloys AMg2P and AD31 are recommended for use in construction structures, while 1951 alloy is recommended for wide-scale testing. 3 figures, 2 tables, 9 biblio. refs.

1/1



Acc. Nr: **AP0046246**

Ref. Code: **UR0511**

PRIMARY SOURCE: Stomatologiya, 1970, Vol 49, Nr 1, pp20-22

*K*

V. I. Kalina— TISSUES OF THE ORAL CAVITY IN HYPOFERRIC ANEMIA

Summary. Clinico-morphological investigations in 42 patients revealed degenerative and atrophic changes of the oral epithelium. In the buccal epithelium there were seen an increased content of acid mucopolysaccharides and a reduced level of neutral mucopolysaccharides. There was a distinct drop of the enzymatic activity of succinic dehydrogenase and cytochromoxidase. Tissue deficiency of iron plays a prominent role in the development of changes in the oral mucous membrane.

1/1

REEL/FRA  
19781364

DI

2

K

USSR

UDC 547.963.3

BRESLER, S. Ye., KALININ, V. I., and PERUMOV, D. A., Institute of High-Molecular Compounds, Academy of Sciences USSR

"Penetration of Bacillus subtilis Cells by Inactivated DNA During Transformation"

Moscow, Molekulyarnaya Biologiya, No 3, 1970, pp 414-421

Abstract: Six inactivating agents (UV light, nitrous acid, dimethylsulfate, hydroxylamine, pancreatic desoxyribonuclease I, and hydrodynamic fragmentation) perceptibly decreased the capacity of DNA to penetrate Bacillus subtilis cells. For example, treatment with hydroxylamine decreased the capacity of DNA to penetrate the cells by 10 to 15%. However, these agents had little influence on the irreversible uptake of DNA by competent cells. A 100-fold decrease in transforming activity reduced the DNA uptake by the recipient cells by 10 to 80%. It was shown that the method of competitive suppression of transformation can be used to measure the capacity of competing DNA to penetrate competent cells, when lethal injuries can be prevented from being incorporated into chromosomes of recipient cells.

1/1

Acc. Nr:

AP0045617

Abstracting Service: K  
CHEMICAL ABST.

3/70

Ref. Code:

NE 0000

62736q Inactivation and mutagenesis of isolated DNA. V. Importance of repairing enzymes for the inactivation of transforming DNA in vitro. Bresler, S. E.; Kalinin, V. L.; Perumov, D. A. (Inst. High Mol. Weight Compounds, Leningrad, USSR). *Mutat. Res.* 1970, 9(1), 1-19 (Eng). The role of repair enzymes in the inactivation rate of transforming DNA was studied. Comparative studies were carried out on recipient strains with and without dark repair (*hcr*<sup>-</sup> and *uvr*<sup>-</sup>). Pronounced dark repair was found for lesions induced in vitro in DNA by uv irradiation, HNO<sub>2</sub>, Me<sub>2</sub>SO, and N-methyl-N'-nitro-N'-nitrosoguanidine. On the other hand, after treatment with NH<sub>2</sub>OH and pancreatic DNase, the residual transforming activity was the same when assayed on *uvr*<sup>+</sup>, *uvr*<sup>-</sup> or *hcr*<sup>-</sup> as hosts. Recombinogens (moderate uv irradiation and mitomycin C) were used on recipient cells to enhance genetic recombination and the rescue of genetic markers during transformation. Both effects changed in parallel as a function of the recipient cells' survival. A quantitative estimate shows that the rescue of inactivated DNA is due partly to DNA repair and partly to increased recombination frequency. Finally, photoreactivating enzyme from bakers' yeast acts not only on inactivating damage induced in transforming DNA by uv irradiation, but also on mutational events generated by irradiation in vitro. This observation confirms that pyrimidine dimers are the main lesions in both conditions. RCMR ✓

1/  
REEL/FRAME

19780594

55

6

1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--PENETRATION OF INACTIVATED DNA INTO COMPETENT CELLS OF BACILUS  
SUBTILIS IN THE COURSE OF TRANSFORMATION -U-  
AUTHOR--(03)-BKESLER, S.YE., KALININ, V.L., PERUMOV, D.A.

COUNTRY OF INFO--USSR

SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 3, PP 414-421

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DNA, BACILLUS SUBTILIS, PHOSPHORUS ISOTOPE, CHEMICAL  
LABELLING, CHEMICAL DECOMPOSITION, CHROMOSOME

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1998/0185

STEP NO--UR/0463/70/004/003/0414/0421

CIRC ACCESSION NO--AP0120883

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120883

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DECREASE IN THE ABILITY OF TRANSFORMING DNA TO PENETRATE INTO COMPETENT CELLS OF BACILLUS SUBTILIS UNDER THE INFLUENCE OF INACTIVATING AGENTS (UV LIGHT, NITROUS ACID, DIMETHYLSULFATE, HYDROXYLAMINE OR HYDRODYNAMIC SHEARING) WAS STUDIED USING A PRIME32 P LABELED DNA PREPARATION. IT WAS SHOWN THAT CHEMICAL OR PHYSICAL MODIFICATION OF ISOLATED DNA CAUSES A DRASTIC LOSS OF TRANSFORMING ACTIVITY BUT ONLY SLIGHT CHANGE OF IRREVERSIBLE DNA UPTAKE BY COMPETENT CELLS. WHEN TRANSFORMING ACTIVITY IS REDUCED 100 FOLD THE EXTENT OF PENETRATION INTO COMPETENT CELLS DECREASES ONLY FOR 10-80 PERCENT. IT WAS CONFIRMED BY DIRECT MEASUREMENTS THAT THE STUDY OF THE COMPETITION OF A GENETICALLY INACTIVE DNA WITH THE TRANSFORMING ONE GIVES GOOD RESULTS FOR THE ESTIMATION OF DNA UPTAKE IN THE CASE WHEN LETHAL HITS ARE PREVENTED FROM INTEGRATION INTO THE RECIPIENT CHROMOSOME. FACILITY: INSTITUTE OF HIGH MOLECULAR WEIGHT COMPOUNDS, ACADEMY OF SCIENCES, USSR, LENINGRAD.

UNCLASSIFIED

USSR

UDC 538.245

KALININ, V. M. and BESKACHKO, V. P., Sverdlovsk Agricultural Institute

"On the Question of the Curie Point of Fe-Ni Invar Alloys Alloyed with a Third Component"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 1, 1973, pp 73-78

Abstract: The effect of Re, Co, Cu, P, Cr, Al, and C on the Curie point of Fe-Ni alloys with an FCC lattice was investigated over a wide range of compositions. It was shown that Co, C and P increase  $T_c$  in the entire interval of compositions while Re, Cr and Al lower  $T_c$  and Cu increases the  $T_c$  of low-nickel invars and lowers the  $T_c$  for high-nickel invars. A linear relationship of  $T_c^2$  ( $c-c_0$ ) exists for all the alloys. On the basis of a model of the collective electrons a theoretical concentration relationship of  $T_c$  was obtained which was close to the critical concentration  $c_0$ . Three figures, one table, eleven bibliographic references.

1/1

- LL -

Heat Treatment

USSR

UDC 538.245

VOROSHILOV, V. P., ZAKHAROV, A. I., KALININ, V. M., and URALOV, A. S., Institute of Precision Alloys, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin, Ural State University imeni A. M. Gorkiy

"Effect of Plastic Deformation and Heat Treatment on Linear Thermal Expansion Coefficient and Magnetic Properties of Invar Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 5, 1973, pp 953-958

Abstract: Experiments were carried out with specimens made from 36NiK<sub>1</sub> and 36NiK<sub>2</sub> alloys which were subjected to homogenization at 1050°C for 100 hours. The linear thermal expansion coefficient ( $\alpha$ ) of these alloys reached its maximum value at 130-170°C and its minimum value at 25 and 270°C. The lowest value of  $\alpha$  was observed for the specimen subjected to severe plastic deformation, and the highest was obtained with specimens subjected to tempering at 600°C for 5 hours, followed by cooling to 100°C for 90 hours. The plastic deformation of the alloy containing 36% Ni increased the magnetic susceptibility in the entire range of magnetic fields (up to 3000 oersted), as well as of magnetostriction. The increase in the magnetic susceptibility and magnetostriction of the paraprocess, and the decrease in the magnetization saturation as a function of plastic deformation of Ni-Fe alloys containing different amounts

1/2

USSR

VOROSHILOV, V. P., et al., Fizika Metallov i Metallovedeniye, Vol. 35, No 5, 1973, pp 953-958

of Ni is attributed to a disintegration of regions with a short-range order (types NiFe or NiFe<sub>3</sub>) and to a static distribution of the iron atoms in solid solution.

2/2



USSR

UDC: 519.2

KALININ, V. M.

"Special Functions and Limiting Properties of Probabilistic Distributions"

Zap. nauch. seminarov. Leningr. otd. Mat. in-ta AN SSSR (Notes of Scientific Seminars. Leningrad Department of the Mathematics Institute of the Academy of Sciences of the USSR), 1972, 26, pp 5-87 (from RZh-Kibernetika, No 10, Oct 72, abstract No IOV8 by B. Rogozin)

Translation: The results of Part I (RZhMat, 1970, 6V7) are used to find representations and asymptotic expansions of Poisson's laws, polynomial, negative binomial, beta- and F-distributions, certain laws of the Pearson system, statistical distribution of some nonparametric matching criteria, and the chi-square test.

1/1

USSR

UDC 538.245

KALITIN, V. M., MARGARYAN, A. V. and DUNAYEV, F. N., Ural State University  
 imeni A. M. Gor'kiy

"Magnetization and Magnetostriction of Iron-Nickel Alloys in Strong Magnetic Fields"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 6, Jun 72, pp 1175-1181

Abstract: An experimental investigation was made of mathematical dependences describing the behavior of magnetization and magnetostriction of ferro-nickel alloys in strong magnetic fields. The anisotropy constant  $K_1$  and the magnetostriction constants  $\lambda_{100}$  and  $\lambda_{111}$  were determined for Fe-Ni alloys with body-centered cubic lattice and for Invar alloys. The constants of magnetic and magnetostrictive susceptibility of the para-process were specified for alloys with 10-60 % Ni. The magnetization saturation is characterized in the differential form

$$k = \frac{A}{H^2} + \frac{B}{H^3} + \frac{C}{H^4} + \dots + k_p,$$

where  $k$ =magnetic susceptibility,  $k_p$ =susceptibility of the para-process, and A, B, C are coefficients characterizing different magnetization mechanisms in a magnetic field. An anomaly of the concentration dependence of the coefficient  $1/2$

USSR

KALININ, V. M., et al., Fizika Metallov i Metallovedeniye, Vol 33, No 6, Jun 72, pp 1175-1181

$A$  was disclosed. It is supposed that the nature of the member  $A/H^2$ , according to the rule of the magnetization approach to saturation, is not related to the presence of nonuniform stresses, but to the presence of a heterogeneous magnetic structure dependent on the composite interaction. Two figures, one table, eleven formulas, seventeen bibliographic references.

2/2

- 29 -

USSR

UDC: 519.2

KALININ, V. M., SHALAYEVSKIY, O. V.

"The Chi-Square Criterion as a Test for Homogeneity"

Zap. nauch. seminarov. Leningr. otd. Mat. in-ta AN SSSR (Notes of Scientific Seminars. Leningrad Department of the Mathematics Institute, Academy of Sciences of the USSR), 1972, 26, pp 108-123 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8 V137)

Translation: The results of a paper by the authors (Abst. 8V136) are extended to the chi-square criterion of homogeneity of  $s$  samples classified with respect to  $r$  values of a single distinctive feature. D. Chibisov.

1/1

USSR

UDC 519.2

KALININ, V. N., SHALAYEVSKIY, O. V.

"Studies with Respect to Classical Problems of Probability Theory and Mathematical Statistics. II"

Issledovaniya po klassicheskim problemam teorii veroyatnostey i matematicheskoy statistiki. II. (Zap. nauch. seminarov. Leningr. otd. Mat. in-ta AN SSSR, 26)  
(Studies with Respect to Classical Problems of Probability Theory and Mathematical Statistics. II. (Notes on Scientific Seminars. Leningrad Division of the Mathematics Institute of the USSR Academy of Sciences, 26)), Leningrad, Nauka Press, 1972, 123 pp, ill., 65 k. (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V122K)

Translation: The collection is abstracted item by item.

1/1

USSR

UDC: 519.214

KALININ, V. M.

"The Gamma Function and Probabilistic Limit Theorems"

Tr. Mat. in-ta AN SSSR (Works of the Mathematics Institute, Academy of Sciences of the USSR), 1970, 111, pp 163-194 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V52)

Translation: The author investigates the limiting properties of multiplicative and negative-binomial Poisson distributions. The method of investigation is based on expansions of the gamma function derived by the author and containing an arbitrary parameter, and on expansions of the

functions  $\left(1 + \frac{y}{x}\right)^x$  and  $\left(1 + \frac{y}{x}\right)^{x\sqrt{x}}$ . It is shown that the proposed method

can be used for studying limiting distributions of sums of identically distributed lattice or continuous random quantities. G. Kalmykov.

1/1

- 6 -

USSR

UDC 621.317.32.015.33

GOYKHEMAN, A. YA., GRYAZNOV, M. I., and KALININ, V. N., Scientific Research  
Institute of Nuclear Physics

"Measurement of Ultrashort Electric Pulse Parameters by the Integral Method  
Using the Franz-Keldysh Effect"

Moscow, Vestnik Moskovskogo Universiteta, Seriya III -- Fizika, Astronomiya,  
Vol 12, No 2, Mar-Apr 71, pp 232-234

Abstract: In an earlier article the authors suggested the idea of recording and determining parameters of ultrashort electric pulses by their "pile-up" on a light carrier by means of an electrooptic modulator based on the Franz-Keldysh effect. It was indicated that one of the ways of obtaining information on ultrashort pulse parameters is the integral method, developed in radio engineering for the measurement of pulse parameters. The present article considers the principle of the measurement of ultrashort pulse parameters. The suggested method makes it possible to determine the amplitude of single square ultrashort pulses and then, using the linear dependence of the output signal

1/2

- 81 -

USSR

CHOYKHMAN, A. YA., et al., Vestnik Moskovskogo Universiteta, Seriya III --  
Fizika, Astronomiya, Vol 12, No 2, Mar-Apr 71, pp 232-234

of the photoreceiver on the duration of the pulse being investigated, to determine the duration of the latter. The use of a greater number of modulators makes it possible to obtain more detailed information on the shape of investigated ultrashort pulses of arbitrary shape.

2/2



1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--EQUILIBRIUM AND KINETIC ACIDITY OF P CARBORANE -U-  
AUTHOR--(05)--PETROV, E.A., YAKOVLEVA, YE.A., ISAYEVA, G.G., KALININ, V.N.,  
ZAKHARKIN, L.I.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 617-19 (CHEM)  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CARBORANE, ISOMER, ISOTOPE EXCHANGE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/0694 STEP NO--UR/0020/70/191/003/0617/0619  
CIRC ACCESSION NO--AT0124366  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE—30OCT70

2/2 012

CIRC ACCESSION NO—AT0124366

ABSTRACT/EXTRACT—(U) GP-O- ABSTRACT. FROM METALATION EX PTS. WITH P  
CARBORANE IN (CH SUB2 ONE) SUB2 AND CYCLO,C SUB6 H SUB11 NH SUB2 THE  
FOLLOWING PKA OF ISOMERIC CARBORANES WERE D4DUCED: O 233.3, M 27.9, P  
30.0; FROM REACTIONS OF ISOTOPIC H EXCHANGE IN LIQ, NH SUB3 THESE WERE  
19.2, 27, 29.4. THE RATE FOR THE P ISOMER HAD THE RATE CONST. X 4.2  
TIMES 10 PRIME NEGATIVE6 SEC PRIME NEGATIVE1 AT 120DEGREES, AND 8.5  
TIMES 10 PRIME NEGATIVE7 SEC PRIME NEGATIVE1 AT 50DEGREES.  
FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--SYNTHESES BASED ON LITHIUM DERIVATIVES OF P CARBORANE -U-

AUTHOR--(03)-ZAKHARKIN, L.I., KALININ, V.N., ZHIGAREVA, G.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKADE. NAUK SSSR, SER. KHIM. 1970, (4), 912-14

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, ORGANOLITHIUM COMPOUND, MERCAPTAN,  
IODINATED ORGANIC COMPOUND, CARBOXYLIC ACID CHLORIDE, AMINE DERIVATIVE,  
CARBORANE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1368

STEP NO--UR/0062/70/000/004/0912/0914

CIRC ACCESSION NO--AP013542

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135042

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO 1,12-DILITHIUM,P,CARBORANE (I), PREPD. FROM 1 G P-CARBORANE IN C SUB6 H SUB6, WAS ADDED 3.5 G IODINE, AND THE MIXT. KEPT 30 MIN TO GIVE 96PERCENT 1,12-DIIOOD,P,CARBORANE, M. 218-190DEGREES; SIMILAR REACTION WITH S GAVE 1,12-DIMERCAPTO,P,CARBORANE M. 150-80DEGREES. PASSING SO SUB2 INTO A SOLN. OF 1,LITHIUM,P,CARBORANE (II) IN C SUB6 H SUB6 GAVE P,CARBORANYLSULFINIC ACID, M. 135-60DEGREES. TREATING P,CARBORANEDICARBOXYLIC ACID WITH PCL SUB5 GAVE THE ACID DICHLORIDE, M. 98DEGREES, WHICH WITH ALCL SUB3 IN C SUB6 H SUB6 ON 20 MIN HEATING GAVE A GOOD YIELD OF 1,12-DIBENZOYL,P,CARBORANE (III), M. 149-50DEGREES, ALSO FORMED FROM I BY TREATING WITH BZCL AT 0DEGREES. III WAS REDUCED WITH LIALH SUB4 IN ET SUB2 O TO 1,12-BIS(BENZYLOXY),P,CARBORANE, M. 153DEGREES. TREATING III WITH NAUET,ETCH OVERNIGHT GAVE ET0BZ AND P,CARBORANE; ALC. KOH SIMILARLY GAVE THE LATTER AND BZCK. II AND MEHGCL IN ET SUB2 O,C SUB6 H SUB6 HEATED 1 HR GAVE 74PERCENT METHYL(P,CARBORANYLMERCURY, M. 192-3DEGREES. II IN HEXANE MIXED WITH NUCL IN ET SUB2 O AT MINUS 75DEGREES GAVE, AFTER 3 HR, A LOW YIELD OF 1,NITROSO,P,CARBORANE,M. 174-50DEGREES. P,CARBORANECARBOXYLIC ACID CHLORIDE, PREPD. IN DRY C SUB6 H SUB6 WITH PCL SUB5, WAS TREATED WITH NAN SUB3 IN AQ. ME SUB2 CO TO YIELD P,CARBORANECARBOXYLIC ACID AZIDE, M. 57-80DEGREES, WHICH HEATED WITH CONCD. H SUB2 SO SUB4 GAVE 1,AMINO,P,CARBORANE,M.2370DEGREES.

FACILITY: INST. ELEMENTORG. SODIN., MOSCOW, USSR.

UNCLASSIFIED